

OFFICIAL GAZETTE



GOVERNMENT OF GOA

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Law (Legal and Legislative Affairs) Department

Notification

10-6-90/LA

The following Notification received from the Government of India, Ministry of Environment and Forests (Department of Environment, Forests and Wildlife), New Delhi, is hereby published for the general information of the public.

P. V. Kadnekar, Under Secretary (Drafting).

Panaji, 6th April, 1990.

MINISTRY OF ENVIRONMENT AND FORESTS

Notification

New Delhi, the 5th December, 1989

Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Micro-Organisms/Genetically Engineered Organisms or Cells.

(To be notified under the EP Act, 1986)

G. S. R. 1037 (E). — In exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) and with a view to protecting the environment, nature and health, in connection with the application of genetechology and micro-organisms, the Central Government hereby makes the following rules, namely: —

1. *Short title, extent and commencement:* — (1) These rules may be called the Rules for the Manufacture, Use, Import, Export and Storage of Hazardous micro-organisms/Genetically engineered organisms or cells.

(2) These rules shall come into operation on the date to be notified for this purpose in the Official Gazette.

2. *Application:* — (1) These rules are applicable to the manufacture, import and storage of micro-organisms and Gene-Technological products.

(2) These rules shall apply to genetically engineered organisms/micro-organisms and cells and correspondingly to any substances and products and food stuffs, etc., of which such cells, organisms or tissues hereof form part.

(3) These rules shall also apply to new genetechnologies apart from those referred to in clauses (ii) and (iv) of rule 3 and these rules shall apply to organisms/micro-organisms and cells generated by the utilisation of such ether gene-technologies and to substances and products of which such organism and cells form part.

(4) These rules shall be applicable in the following specific cases;

(a) sale, offers for sale, storage for the purpose of sale, offers and any kind of handling over with or without a consideration;

(b) exportation and importation of genetically engineered cells or organisms;

(c) production, manufacturing, processing, storage, import, drawing off, packaging and re-packaging of the Genetically Engineered Products;

(d) production, manufacture etc., of drugs and pharmaceuticals and food stuffs distilleries and tanneries, etc., which make use of micro-organisms/genetically engineered micro-organisms one way or the other.

(5) These rules shall be applicable to the whole of India.

3. *Definitions.* — In these rules unless the context requires.

(i) "Biotechnology" means the application of scientific and engineering principles to the processing of materials by biological agents to produce goods and services;

(ii) "Cell hybridisation" means the formation of live cells with new combinations of genetic material through the fusion of two or more cells by means of methods which do not occur naturally;

(iii) "Gene Technology" means the application of the gene technique called genetic engineering, includselfcloning and deletion as well as cell hybridisation;

(iv) "Genetic engineering" means the technique by which heritable material, which does not usually occur or will not occur naturally in the organism or cell concerned, generated outside the organism or the cell is inserted into said cell or organism. It shall also mean the formation of new combinations of genetic material by incorporation of a cell into a host cell, where they occur naturally (self cloning) as well as modification of an organism or in a cell by deletion and removal of parts of the heritable material;

(v) "microorganisms" shall include all the bacteria, viruses, fungi, mycoplasma, cell lines, algae, protozoans and nematotes indicated in the schedule and those that have not been presently known to exist in the country or not have been discovered so far.

4. Competent Authorities.— (1) Recombinant DNA Advisory Committee (RDAC).

This committee shall review developments in Biotechnology at national and international levels and shall recommend suitable and appropriate safety regulations for India in recombinant research, use and applications from time to time. The Committee shall function in the Department of Biotechnology.

(2) Review Committee on Genetic Manipulation (RCGM).

This committee shall function in the Department of Biotechnology to monitor the safety related aspects in respect of on-going research projects and activities involving genetically engineered organisms/hazardous microorganisms. The Review Committee on Genetic Manipulation shall include representatives of (a) Department of Biotechnology (b) Indian Council of Medical Research (c) Indian Council of Agricultural Research (d) Council of Scientific and Industrial Research (e) other experts in their individual capacity. Review Committee on Genetic Manipulation may appoint sub groups.

It shall bring out Manuals of guidelines specifying procedure for regulatory process with respect to activities involving genetically engineered organisms in research, use and applications including industry with a view to ensure environmental safety. All ongoing projects involving high risk category and controlled field experiments shall be reviewed to ensure that adequate precautions and containment conditions are followed as per the guidelines.

The Review Committee on Genetic Manipulation shall lay down procedures restricting or prohibiting production, sale, importation and use of such genetically engineered organism of cells as are mentioned in the Schedule.

(3) Institutional Biosafety Committee (IBSC).

This committee shall be constituted by an occupier or any person including research institutions handling microorganism/genetically engineered organisms. The committee shall comprise the Head of the institution, Scientists engaged in DNA work, a medical expert and a nominee of the Department of Biotechnology. The occupier or any person including research institutions handling microorganisms/genetically engineered organisms shall prepare, with the assistance of the Institutional Biosafety Committee (IBSC) an up-to-date on-site emergency plan according to the manuals/guidelines of the RCGM and make available copies to the District Level Committee/State Biotechnology Co-ordination Committee and the Genetic Engineering Approval Committee.

(4) Genetic Engineering Approval Committee (GEAC).

This committee shall function as a body under the Department of Environment, Forest and Wildlife for approval of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle. The Committee shall also be responsible for approval of proposals relating to release of genetically engineered organisms and products into the environment including experimental field trials.

The composition of the Committee shall be.

- (i) Chairman — Additional Secretary Department of Environment, Forests and Wildlife.
- Co-Chairman — Representative of Department of Bio-technology.
- (ii) Members: Representatives of concerned Agencies and Departments, namely, Ministry of Industrial Development, Department of Biotechnology and the Department of Atomic Energy.
- (iii) Expert members: Director General — Indian Council of Agricultural Research, Director General - Indian Council of Medical Research, Director General — Council of Scientific and Industrial Research, Director General — Health Services, Plant Protection, Adviser, Directorate of Plant Protection, Quarantine and storage, Chairman, Central Pollution Control Board and three outside experts in individual capacity.
- (iv) Member Secretary: An official of the Department of Environment, Forest and Wildlife.

The committee may co-opt other members/experts as necessary.

The committee or any person/s authorised by it shall have powers to take punitive action under the (Environment Protection) Act.

(5) State Biotechnology Co-ordination Committee (SBCC).

There shall be a State Biotechnology Coordination Committee in the States wherever necessary. It shall have powers to inspect, investigate and take punitive action in case of violations of statutory provisions through the Nodal Department and the State Pollution Control Board/Directorate of Health/Medical Services. The Committee shall review periodically the safety and control measures in the various industries/institutions handling genetically engineered Organisms/Hazardous micro-organisms. The composition of the Coordination Committee shall be:

(i) Chief Secretary	— Chairman
(ii) Secretary, Department of Environment	— Member Secretary
(iii) Secretary, Department of Health	— Member
(iv) Secretary, Department of Agriculture	— Member
(v) Secretary, Department of Industries and Commerce	— Member

- (vi) Secretary, Department of Forests — Member
- (vii) Secretary, Department of Public Works/ Chief Engineering Department of Public Health Engineering — Member.
- (viii) State Microbiologists and Pathologists — Member
- (ix) Chairman of State Pollution Control Board

The Committee may co-opt other members/experts as necessary.

(6) District Level Committee (DLC).

There shall be a District Level Biotechnology Committee (DLC) in the districts wherever necessary under the District Collectors to monitor the safety regulations in installations engaged in the use of genetically modified organisms/hazardous microorganisms and its applications in the environment.

The District Level Committee/or any other person/s authorised in this behalf shall visit the installation engaged in activity involving genetically engineered organisms, hazardous microorganisms, formulate information chart, find out hazards and risks associated with each of these installations and coordinate activities with a view to meeting any emergency. They shall also prepare an off-site emergency plan. The District Level Committee shall regularly submit its report to the State Biotechnology Co-ordination Committee/Genetic Engineering Approval Committee.

The District Level Committee shall comprise of:—

- (i) District Collector — Chairman
- (ii) Factory Inspector — Member
- (iii) A representative of the Pollution Control Board — Member
- (iv) Chief Medical Officer (District Health Officer) — Member (Convenor)
- (v) District Agricultural Officer — Member
- (vi) A representative of the Public Health Engineering Department — Member
- (vii) Districts Microbiologists Pathologist (technical expert) — Member
- (viii) Commissioner Municipal Corporation — Member

The Committee may co-opt other members/experts as necessary.

5. Classification of microorganisms or genetically engineered product (i) For the purpose of these rules, microorganisms or genetically engineered organisms, products or cells shall be dealt with under two major heads; animal pathogens and plant pests and these shall be classified in the manner specified in the Schedule.

(2) If any of the microorganism, genetically engineered organism or cell falls within the limits of more than one risk class as specified in the Schedule, it shall be deemed to belong exclusively to the last in number of such classes.

6. Microorganisms laid down in the Schedule are divided into the following:—

- (i) Bacterial Agents;
- (ii) Fungal Agents;
- (iii) Parasitic Agents;
- (iv) Viral, Rickettsial and Chalmydial Agents;
- (v) Special Category.

7. Approval and Prohibitions, etc:— (1) No person shall import, export, transport, manufacture, process, use or sell any hazardous microorganisms or genetically engineered organisms/substances or cells except with the approval of the Genetic Engineering Approval Committee.

(2) Use of pathogenic microorganism or any genetically engineered organisms or cell for the purpose of research shall only be allowed in laboratories or inside laboratory areas notified by the Ministry of Environment and Forests for this purpose under the Environment (Protection) Act, 1986.

(3) The Genetic Engineering Approval Committee shall give directions to the occupier to determine or take measures concerning the discharge of microorganisms/genetically engineered organisms or cells mentioned in the schedule from the laboratories, hospitals and other areas including prohibition of such discharges and laying down measures to be taken to prevent such discharges.

(4) Any person operating or using genetically engineered organisms/microorganisms mentioned in the schedule for scale up or pilot operations shall have to obtain licence issued by the Genetic Engineering Approval Committee for any such activity. The possessor shall have to apply for licence in prescribed proforma.

(5) Certain experiments for the purpose of education within the field of gene technology or micro-organism may be carried out outside the laboratories and laboratory areas mentioned in sub-rule (2) and will be looked after by the Institutional Biosafety Committee.

8. Production. — Production in which genetically engineered organisms or cells or micro-organism are generated or used shall not be commenced except with the consent of Genetic Engineering Approval Committee with respect of discharge of genetically engineered organisms or cells into the environment. This shall also apply to production taking place in connection with development, testing and experiments where such production, etc., is not subject to rule 7.

9. Deliberate or unintentional release. — (1) Deliberate or unintentional release of genetically engineered organisms / hazardous microorganisms or cells, including deliberate release for the purpose of experiment shall not be allowed.

Note: Deliberate release shall mean any intentional transfer of genetically engineered organisms/ hazardous microorganisms or cells to the environment or nature, irrespective of the way in which it is done.

(2) The Genetic Engineering Approval Committee may in special cases give approval of deliberate release.

10. Permission and approval for certain substances. — Substances and products, which contain genetically engineered organisms or cells or microorganisms shall not be produced, sold, imported or used except with the approval of Genetic Engineering Approval Committee.

11. Permission and approval for food stuffs. — Food stuffs, ingredients in food stuffs and additives including processing aids containing or consisting of genetically engineered organisms or cells, shall not be produced, sold, imported or used except with the approval of the Genetic Engineering Approval Committee.

12. Guidelines. — (1) Any person who applies for approval under rules 8-11 shall, as determined by the Genetic Engineering Approval Committee submit information and make examinations or cause examinations to be made to elucidate the case, including examinations according to specific directions and at specific laboratories. He shall also make available an on-site emergency plan to GEAC before obtaining the approval. If the authority makes examination itself, it may order the applicant to defray the expenses incurred by it in so doing.

(2) Any person to whom an approval has been granted under rules 8-11 above shall notify the Genetic Engineering Approval Committee of any change in or addition to the information already submitted.

13. Grant of approval. — (1) In connection with the granting of approval under rules 8 to 11 above, terms and conditions shall be stipulated, including terms and conditions as to the control to be exercised by the applicant, supervision, restriction on use, the layout of the enterprise and as to the submission of information to the State Biotechnology Co-ordination Committee or to the District Level Committee.

(2) All approvals of the Genetic Engineering Approval Committee shall be for a specified period not exceeding four years at the first instance renewable for 2 years at a time. The Genetic Engineering Approval Committee shall have powers to revoke such approval in the following situations:—

- (a) If there is any new information as to the harmful effects of the genetically engineered organisms or cells.
- (b) If the genetically engineered organisms or cells cause such damage to the environment, nature or health as could not be envisaged when the approval was given, or
- (c) Non compliance of any condition stipulated by Genetic Engineering Approval Committee.

14. Supervision. — (1) The Genetic Engineering Approval Committee may supervise the implementation of the terms and conditions laid down in connection with the approvals accorded by it.

(2) The Genetic Engineering Approval Committee may carry out this supervision through the State Biotechnology Coordination Committee or the State Pollution Control Boards/District Level Committee or through any person authorised in this behalf.

15. Penalties. — (1) If an order is not complied with, the District Level Committee or State Biotechnology Co-ordination Committee may take measures at the expense of the person who is responsible.

(2) In cases where immediate intervention is required in order to prevent any damage to the environment, nature or health, the District level Committee or State Biotechnology Coordination Committee may take the necessary steps without issuing any orders or notice. The expenses incurred for this purpose will be repayable by the person responsible for such damage.

(3) The State Biotechnology Co-ordination Committee/District Level Committee may take samples for a more detailed examination of organisms and cells.

(4) The State Biotechnology Co-ordination Committee/District Level Committee shall be competent to ask for assistance from any other Government authority to carry out its instructions.

16. Responsibility to notify interruptions or accidents. — (1) Any person who under rule 7-11 is responsible for conditions or arrangements shall immediately notify the District Level Committee/ State Biotechnology Co-ordination Committee and the state medical officer of any interruption of operations or accidents that may lead to discharges of genetically engineered organisms or cells which may be harmful to the environment, nature or health or involve any danger thereto.

(2) Any notice given under sub-rule (1) above shall not lessen the duty of the person who is responsible to try effectively to minimise or prevent the effects of interruptions of operations or accidents.

17. Preparation of off-site emergency Plan by the DLC. — (1) It shall be the duty of the DLC to prepare an off-site emergency plan detailing how emergencies relating to a possible major accident at a site will be dealt with and in preparing the plan, the DLC shall consult the occupier and such other person as it may deem necessary.

(2) For the purpose of enabling the DLC to prepare the emergency plan required under sub-rule (1), the occupier shall provide the DLC with such information relating to the handling of hazardous microorganisms/genetically engineered organisms under his control as the DLC may require including the nature, extent and likely off-site affects of a possible major accident and the DLC shall provide the occupier with any information from the off-site emergency plan which relates to his duties under rule 16.

18. Inspections and informations regarding finance. — (1) The State Biotechnology Co-ordination Committee or the Genetic Engineering Approval Committee/the DLC or any person with special knowledge duly authorised by the State Biotechnology Co-ordination Committee or the Genetic Engineering Approval Committee or the DLC where it is deemed necessary, at any time on due production of identity be admitted to public as well as to private premises and localities for the purpose of carrying out supervision.

(2) Any person who is responsible for activities subject to rules 7-11 above shall at the request of District Level Committee or State Biotechnology Co-ordination Committee or the GEAC submit all such information including information relating to financial conditions and accounts, as is essential to the authority's administration under these rules. He shall also allow supervision or inspection by the authorities or persons indicated in sub-rule (1).

(3) The Genetic Engineering Approval Committee may fix fees to cover, in whole or in part, the expenses incurred by the authorities in connection with approvals, examinations, supervision and control.

19. *Appeal.*— (1) Any person aggrieved by a decision made by Genetic Engineering Approval Committee/State Biotechnology Co-ordination Committee in pursuance of these rules may within thirty days from the date on which the decision is communicated to him, prefer an appeal to such authority as may be appointed by Ministry of Environment and Forests provided that the appellate authority may entertain the appeal after the expiry of the said period of thirty days if such authority is satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.

20. *Exemption.*— The Ministry of Environment and Forests shall, wherever necessary, exempt an occupier handling a particular microorganism/genetically engineered organism from rules 7—11.

ANIMAL AND HUMAN PATHOGENS

Schedule

BACTERIAL

Risk Group II:

- Acinetobacter calcoaceticus*
- Actinobacillus* — all species except *A. mallei*, which is in Risk Group III
- Aeromonas hydrophila*
- Arizona hinshawii* — all serotypes
- Bacillus anthracis*
- Bordetella* — all species
- Borrelia recurrentis*, *B. vincenti*
- Campylobacter fetus*
- Campylobacter jejuni*
- Chlamydia psittaci*
- Cheamydia trachomatis*
- Clostridium chauvoei*, *Cl. difficile* *Cl. fallax*, *Cl. haemolyticum* *Cl. histolyticum*, *Cl. novyi*, (*Cl. perfringens*), *Cl. speticum*, *Cl. sordelli*
- Corynebacterium diphtheriae*, *C. equi*, *C. haemolyticum*, *C. pseudotuberculosis*, *C. pyogenes*, *C. renale*
- Diplococcus (Streptococcus) pneumoniae*
- Edwardsiella tarda*
- Erysipelothrix insidiosa*
- Escherichia Coli*—all enteropathogenic serotypes, enterotoxigenic
- Haemophilus ducreyi*, *H. influenzae*, *H. pneumoniae*
- Herellea vaginicola*
- Klebsiella*—all species and all serotypes
- Legionella pneumophila*

Lilionella

Leptospira interrogans—all serotypes reported in India

Listeria, all species

Mima polymorpha

Moraxella—all species

Mycobacteria—all species including *Mycobacterium avium*

M. bovis, *M. tuberculosis*, *M. leprae*

Mycoplasma—all species except *M. mycoides* and *M. angalactiae*

Neisseria gonorrhoea, *N. meningitidis*

Pasteurella—all species except those listed in Risk Group III

Salmonella—all species and all serotypes

Shigella—all species and all serotypes

Sphaerophorus necrophorus

Staphylococcus aureus

Streptobacillus moniliformis

Streptococcus pneumoniae

Streptococcus pyogenes, *S. equi*

Streptomyces madurae, *s. pelleteeri*, *s. somaliensis*

Treponema carateum, *T. pallidum* and *T. pertenue*

Vibrio foetus, *V. comma* including biotype El Tor and

V. parahemolyticus.

Vibrio cholerae

Risk Group III:

Actinobacillus mallei

Bartonella—all species

Brucella—all species

Clostridium botulinum, *Cl. tetani*

Francisella tularensis

Mycobacterium avium, *M. bovis*, *M. tuberculosis*, *m. leprae*

Pasteurella multocida type B ("buffalo" and other foreign virulent strains)

Pseudomonas pseudomallai

Yersinia pestis

FUNGAL

Risk Group II:

Actinomycetes (including *Nocardia* SP, *Actinomyces* species and *Arachina propinica*)

Aspergillus fumigatus

Blastomyces dermatitidis

Cryptococcus neoformans *C. fersiminosos*

Epidermophyton *madurella*, *microsporon*

Paracoccidioides brasiliensis

Sporothrix

Trichoderma

Trichophyton

Risk Group III:

Coccidioides immitis

Histoplasma capsulatum

Histoplasma capsulatum var *duboisii*

PARASITIC:

Risk Group II:

Entamoeba histolytica

Leishmania species

Naegleria gruberia	Simian virus 40 —
Plasmodium theilera, P. babesia, P. falcoparum	Ad 7 SV 40 (defective)
Plasmodium babesia	Sinbis virus
Schistosoma	Tensaw virus
Toxoplasma gondii	Turlock virus
Toxocara canis	Vaccinia virus
Trichinella spiralis	Varicella virus
Trichomanas	Vole rickettsia
Trypanosoma cruzi	Yellow fever virus, 17D vaccine strain
Risk Group III:	Risk Group III
Schistosoma mansoni	African House Sickness (attenuated strain except animal passage)
VIRAL RICKETTSIAL AND CHLAMYDIAL	Alastrim, monkey pox and whitepox, when used in vitro
Risk Group II:	Arboviruses — All strains except those in Risk Group II and IV
Adenoviruses — Human, all types	Blue tongue virus (only serotypes reported in India)
Avian loukosis	Ebola fever Virus
Cache Valley virus	Epstein — Barr virus
CELO (avain adenovirus)	Feline Leukemia
Coxsackie A and B viruses	Feline sarcoma
Corona viruses	Foot and Mouth Disease virus (all serotypes and subtypes)
Cytomegalo viruses	Gibbon Ape Lymphosarcoma
Dengue virus, when used for transmission experiments	Herpesvirus ateles
Echo viruses — all types	Herpesvirus saimiri
Encephalomyocarditis virus (EMC)	Herpes simplex 2
Flanders virus	HIV-1 & HIV-2 and strains of SIV
Hart Part virus	Infectious Equine Anaemia
Hepatitis associated antigen material — hepatitis A and B viruses, non A and non B, HDV	Lymphocytic choriomeningitis virus (LCM)
Herpes viruses — except herpesvirus simiae (monkey B virus) which is in Risk Group IV.	Monkey pox, when used in vitro
Infectious Bovine Rhinotracheitis virus (IBR)	Non-defective Adeno-2 SV-40 hybrids
Infectious Bursal diseases of poultry and Infectious Bronchitis	Psittacosis-ornithosis-trachoma group of agents
Infectious Laryngotracheitis (ILT)	Pseudorabies virus
Influenza virus — all types, except A/PR8/34 which is in Risk Group I	Rabies street virus, when used inoculations of carnivores
Langat virus Leucosis Complex	Rickettsia — all species except Vole rickettsia and Coxiel burnetti when used for vector transmission or animal inoculation experiments
Lymphogranuloma venereum agent	Sheep pox (field strain)
Marek's Disease virus	Swine Fever virus
Measles virus	Vesicular stomatitis virus
Mumps virus	Wooly monkey Fibrosarcoma
Newcastle disease virus (other than licensed strain for vaccine use)	Yaba pox virus
Parainfluenza viruses — all types except parainfluenza virus 3, SF4 strain, which is in Risk Group I	Risk Group IV:
Polio viruses — all types, wild and attenuated	Alastrim, monkeypox, whitepox, when used for transmission or animal inoculation experiments
Poxviruses — all types except Alastrim, monkey pox, sheep pox and white pox, which depending on experiments are in Risk Group III or IV.	Hemorrhagic fever agents, including Crimean hemorrhagic fever (congo)
Rabies virus — all strains except rabies street virus, which should be classified in Risk Group III when inoculated into carnivores	Korean hemorrhagic fever and others as yet undefined
Reoviruses — all types	Herpesvirus simiae (monkey B virus)
Respiratory syncytial virus	Tick-borne encephalitis virus complex, including -Russian Spring Summer Encephalitis, Kyasanur Forest Disease, omsk hemorrhagic fever and Central European encephalitis viruses.
Rhinoviruses — all types	
Rinderpest (other than vaccine strain in use)	SPECIAL CATEGORY
Rubella virus	BACTERIAL
Stimian viruses — all types except herpeavirus simiae (Monkey Virus) which is in Risk Group IV.	Contagious Equine Metritis (H. equigenitalis) Pestis petit de ruminantium

VIRAL RICKETTSIAL AND CHAMYDIAL

African Horse Sickness virus (serotypes not reported in India and challenge strains)
 African Swine Fever
 Bat rabies virus
 Blue tongue virus (serotypes not reported in India)
 Exoctic FMD virus types and sub-types
 Junin and Machupo viruses
 Lassa virus
 Marburg virus
 Murray valley encephalitis virus
 Rift Valley Fever virus
 Smallpox virus-Archival Storage and propagation
 Swine Vesicular Disease
 Veneseulan equine encephalitis virus — epidemic strains
 Western Equine encephalitis virus
 Yellow fever virus — Wild strain
 Other Arboviruses causing epizootics and so far not recorded in India.

B: PLANT PESTS

Any living stage (including active and dormant forms) of insects, mites, nematodes, slugs, snails, bacteria, fungi, protozoa, other parasitic plants or reproductive parts thereof: viruses; or any organisms similar to or allied with any of the foregoing; or any infectious agents or substances, which can directly or indirectly injure or cause disease or damage in or to any plants or parts thereof, or any processed, manufactured, or other products of plants are considered plant pests.

Organisms belonging to all lower Taxa contained within the group listed are also included.

1. Viruses**All Viroids**

All bacterial, fungal, algal, plant, insect and nematode viruses; special care should be taken for—

- (i) Geminiviruses,
- (ii) Caulimoviruses,
- (iii) Nuclear Polyhedrosis viruses,
- (iv) Granulosis viruses, and
- (v) Cytoplasmic polyhedrosis viruses

2. Bacteria**Family Pseudomonadaceae**

- Genus *Pseudomonas*
- Genus *Xanthomonas*
- Genus *Azotobacter*

Family Rhizobiaceae

- Genus *Rhizobium/Azorhizobium*
- Genus *Bradyrhizobium*
- Genus *Agrobacterium*
- Genus *Phyllobacterium*
- Genus *Erwinia*
- Genus *Enterobacter*
- Genus *Klebsiella*

Family Spiillacaceae

- Genus *Azospirillum*
- Genus *Acquspirillum*
- Genus *Oceonospirillum*

Family Streptomycetaceae

- Genus *Streptomyces*
- Genus *Noeardia*

Family Actinomycetaceae**Genus Actinomyces****Coryneform Group**

- Genus *Clavibacter*
- Genus *Arthrobacter*
- Genus *Curtobacterium*
- Genus *Edellovibrio*

Family Rickettsiaceae

Rickettsial-like organisms associated with insect diseases

Gram-negative phloem-limited bacteria associated with plant diseases

Gram-negative xylem-limited bacteria associated with plant diseases

Cyanobacteria — All members of blue-green algae

Mollicutes**Family Spiroplasmataceae**

Mycoplasma-like organisms associated with plant diseases

Mycoplasma-like organisms associated with insect diseases

Algae**Family Chlorophyceae****Family Euglenophyceae****Family Pyrophyceae****Family Chrysophyceae****Family Phaeophyceae****Family Rhodophyceae****Fungi****Family Plasmodiophoraceae****Family Chytridiaceae****Family Olpidiopsidaceae****Family Synchytriaceae****Family Catenariaceae****Family Coelomomyctaceae****Family Saprolegniaceae****Family Zoopagaceae****Family Albuginaceae****Family Peronosporaceae****Family Pythiaceae****Family Mucoraceae****Family Choanephoraceae****Family Mortierellaceae****Family Endogonaceae****Family Syncephalastraceae****Family Dimargaritaceae****Family Kickxellaceae****Family Saksenaeaceae****Family Entomophthoraceae****Family Ecerinaceae****Family Taphrinaceae****Family Endomycetaceae****Family Saccharomycetaceae****Family Eurotiaceae****Family Gymnoascaceae****Family Aseophaeriaceae****Family Onygenaceae****Family Microascaceae****Family Protomycetaceae****Family Elsinoeaceae****Family Myriangiaceae****Family Dothidiaceae****Family Chaetothyriaceae****Family Parmulariaceae****Family Phillipsiellaceae****Family Hysteriaceae**

Family Pleosporaceae
 Family Melamomataceae
 Family Ophiostomataceae
 Family Aseosphaeriaceae
 Family Erysiphaceae
 Family Meliolaceae
 Family Xylariaceae
 Family Diaporthaceae
 Family Hypocreaceae
 Family Clavicipitaceae
 Family Phaciidae
 Family Ascocorticiaceae
 Family Hemiphacidiaceae
 Family Dermataceae
 Family Sclerotiniaceae
 Family Cytariaceae
 Family Helosiaceae
 Family Sarcostomataceae
 Family Sarcoscyphaceae
 Family Auricolariaceae
 Family Ceratobasidiaceae
 Family Corticiaceae
 Family Hymenochaetaceae
 Family Echinodintiaceae
 Family Eistuliniaceae
 Family Claviaceae
 Family Polyporaceae
 Family Tricholomaluceae
 Family Ustilaginaceae
 Family Sporobolomycetaceae
 Family Uredinaceae
 Family Agaricaceae
 Family Graphiolaceae
 Family Pucciniaceae
 Family Melampsoraceae
 Family Gandodemataceae
 Family Labonbeniaceae
 Family Spaeropsidaceae
 Family Melabconiaceae
 Family Tuberculariaceae
 Family Dematiaceae
 Family Moniliaceae
 Family Aganomucetaceae

Parasitic Weeds

Family Balanophoraceae-parasitic species
 Family Cuscutaceae-parasitic species
 Family Titydonoraceae-parasitic species
 Family Lauraceae-parasitic species Genus Cassytha
 Family Lennoaceae-parasitic species
 Family Loranthaceae-parasitic species
 Family Myzodendraceae-parasitic species
 Family Olacaceae-parasitic species
 Family Orobanchaceae-parasitic species
 Family Rafflesiaceae-parasitic species
 Family Santalaceae-parasitic species
 Family Scrophulariaceae-parasitic species

Protozoa

Genus Phytomonas
 And all Protoza associated with insect diseases.

Nematodes

Family Anguinidae
 Family Belonolaimidae
 Family Calooshiidae
 Family Criconematidae
 Family Dolichodoridae
 Family Fergusobiidae
 Family Hemicycliophoridae

Family Heteroderidae
 Family Hoplolaimidae
 Family Meloidogynidae
 Family Neotylenchidae
 Family Nothotylenchidae
 Family Paratylenchidae
 Family Pratylenchidae
 Family Tylenchidae
 Family Tylenchulidae
 Family Aphelenchoidiae
 Family Longidoridae
 Family Trichodoridae

Mollusca

Superfamily Planorbacea
 Superfamily Achatinacea
 Superfamily Arionacea
 Superfamily Limacacea
 Superfamily Helicacea
 Superfamily Veronicellacea

Arthropoda

Superfamily Ascoidea
 Superfamily Dermanyssoidae
 Superfamily Erjophyoidea
 Superfamily Tetranychoidea
 Superfamily Eupodoidea
 Superfamily Tydeoidea
 Superfamily Erythraenoidea
 Superfamily Trombidioidea
 Superfamily Hydryphantoidea
 Superfamily Tarasonemoidea
 Superfamily Pyemotoidea
 Superfamily Hemisarcoptoidae
 Superfamily Acaroidea
 Order Polydesmida
 Family Sminthoridae
 Family Forfieulidae
 Order Isoptera
 Order Thysanoptera
 Family Acrididae
 Family Gryllidae
 Family Gryllacrididae
 Family Gryllotalpidae
 Family Phasmatidae
 Family Ronaleidae
 Family Tettigoniidae
 Family Tetragidae
 Family Thaumastocoridae
 Superfamily Piesmatoidea
 Superfamily Lygaeoidea
 Superfamily Idiostoloidea
 Superfamily Careoidea
 Superfamily Pentatomoidae
 Superfamily Phyrhocoroidea
 Superfamily Tingoidea
 Superfamily Miroidea
 Order Homoptera
 Family Anobiidae
 Family Apionidae
 Family Anthribidae
 Family Bostrichidae
 Family Brentidae
 Family Bruchidae
 Family Buprestidae
 Family Byturidae
 Family Cantharidae
 Family Carabidae
 Family Ceambycidae
 Family Chrysomelidae
 Family Coecinellidae
 Family Curculionidae

Family Dermestidae
 Family Elateridae
 Family Hydrophilidae
 Family Lyctidae
 Family Meloidae
 Family Mordellidae
 Family Platypodidae
 Family Scarabaeidae
 Family Scolytidae
 Family Selbytidae
 Order Lepidoptera
 Family Agromyzidae
 Family Anthomiidae
 Family Cecidomiidae
 Family Chioropidae
 Family Ephydriidae
 Family Lonchaeidae
 Family Muscidae
 Family Otitidae
 Family Syrphidae
 Family Tephritidae
 Family Tipulidae
 Family Apidae
 Family Caphidae
 Family Chalcidae
 Family Cynipidae
 Family Eurytomidae
 Family Formicidae
 Family Psilidae
 Family Sircidae
 Family Tenthredinidae
 Family Tormidae
 Family Xylopiidae
 and

Also unclassified organisms and/or organisations whose classification is unknown, and all other organisms associated with plant and insect diseases.

[No. 1 (20) /86-PL/HSMD]
 DR. G. SUNDARAM, Jt. Secy.

Legislature Department

LA/B/1008/1990
 Dt. 10/7/90

The following Bill which was introduced in the Legislative Assembly of Goa on 9-7-90 is hereby published for general information in pursuance of the provisions of Rule-136 of the Rules of Procedure and Conduct of Business of the Legislative Assembly.

The Goa Mundkars (Protection from Eviction)

(Amendment) Bill, 1990.
 (Bill No. 8 of 1990)

A
 BILL

further to amend the Goa, Daman and Diu Mundkars (Protection from Eviction) Act, 1975.

Be it enacted by the Legislative Assembly of Goa in the Forty-first Year of the Republic of India as follows:—

1. *Short title and commencement.*—(1) This Act may be called the Goa Mundkars (Protection from Eviction) (Amendment) Act, 1990.

(2) It shall come into force at once.

2. *Amendment of section 29.*—In sub-section (7) of section 29 of the Goa, Daman and Diu Mundkars (Protection from Eviction) Act, 1975 (Act 1 of 1976), the words “and also in the local newspapers” shall be omitted.

Statement of Objects and Reasons

In terms of sub-section (7) of section 29 of the Goa, Daman and Diu Mundkars (Protection from Eviction) Act, 1975, the order of the Mamlatdar under section 29 (6) regarding registering of the Mundkar or rejecting the application, besides being served on the interested persons and published in the notice boards of the office of the village concerned, is also required to be published in the local newspapers which entails huge expenditure as the order under section 29(6) is normally quite lengthy.

It is, therefore, proposed to dispense with the requirement of publication of the said order in the local newspapers.

This Bill seeks to achieve the above object.

Financial Memorandum

No financial implications are involved in this Bill.

Panaji
 June 29, 1990

DR. KASHINATH G. JALMI
 Minister for Revenue

Assembly Hall
 Panaji
 July 3, 1990

M. M. NAIK
 Secretary to the Legislative
 Assembly of Goa

(Annexure to Bill No. 8 of 1990)

**The Goa Mundkars (Protection from Eviction)
 (Amendment) Bill, 1990**

The Goa, Daman and Diu Mundkars (Protection from Eviction)

Act, 1975

(Act 1 of 1976)

29(7) The Order of the Mamlatdar under Sub-served on the interested persons and shall also be published in the notice boards of the village office of the village in which the dwelling house is situated and also in the local news papers.

Assembly Hall,
 Panaji,
 3rd July, 1990.

M. M. NAIK
 Secretary to the Legislative
 Assembly of Goa

LA/B/1009/1990

Dt. 10/7/90

The following Bill which was introduced in the Legislative Assembly of Goa on 9-7-90 is hereby published for general information in pursuance of the provisions of Rule-136 of the Rules of Procedure and Conduct of Business of the Legislative Assembly.

The Goa (Extension of the Dowry Prohibition Act) Bill, 1990

(Bill No. 9 of 1990)

A
BILL

to provide for the extension of the Dowry Prohibition Act, 1961 to the State of Goa.

Be it enacted by the Legislative Assembly of Goa in the Forty-first Year of the Republic of India as follows:—

1. *Short title and commencement.*—(1) This Act may be called the Goa (Extension of the Dowry Prohibition Act) Act, 1990.

(2) It shall come into force at once.

2. *Extension of Dowry Prohibition Act, 1961 to State of Goa.*—The Dowry Prohibition Act, 1961 (Central Act 28 of 1961), as in force in the territories to which it generally extends, is hereby extended to the State of Goa.

3. *Repeal and Saving.*—So much of any law in force in the State of Goa as corresponds to the Dowry Prohibition Act, 1961 (Central Act 28 of 1961), shall stand repealed as from the coming into force of this Act in the State of Goa:

Provided that the repeal shall not affect—

(a) the previous operation of any law so repealed or anything duly done or suffered thereunder; or

(b) any right, privilege, obligation or liability acquired, accrued or incurred under any law so repealed; or

(c) any penalty, forfeiture or punishment incurred in respect of any offence committed against any law so repealed; or

(d) any investigation, legal proceeding or remedy in respect of any such right, privilege, obligation or liability, penalty, forfeiture or punishment, as aforesaid;

and any such investigation, legal proceeding or remedy may be instituted, continued or enforced and any such penalty, forfeiture or punishment may be imposed as if this Act had not been passed:

Provided further that subject to the preceding proviso, anything done or any action taken (including any rule made) under any law so repealed shall, so far as they are consistent with the said Act, be deemed to have been done or taken under the corresponding provisions of the said Act as extended to the State of Goa by this Act and shall continue to be in force accordingly unless and until superseded by anything done or any action taken under the said Act.

Statement of Objects and Reasons

The Dowry Prohibition Act, 1961 has not yet been extended to this State of Goa.

It is, therefore, proposed to extend the said Act to this State so as to curb the growing menace of Dowry system and its consequent evil effects.

This Bill seeks to achieve the above object.

Financial Memorandum

When the Goa (Extension of the Dowry Prohibition Act) Act, 1990 comes into force, its enforcement will be with the Collectors (North and South), Additional Collectors (North and South), Dy. Collector (Development) North, Dy. Collector (Development) South, Sub-Divisional Officers (Dy. Collectors) for Panaji, Mapusa and Ponda (all North Goa) and Sub-Divisional Officers (Dy. Collectors) for Margao, Quepem and Mormugao (all South Goa).

The above mentioned officers will be declared as Ex-Officio Dowry Prohibition Officers for their respective areas and as such there will be no financial implications involved.

Panaji
June, 29, 1990

LUIS ALEX CARDENAS
Minister of State for
Social Welfare

Assembly Hall,
Panaji
July 3, 1990

M. M. NAIK
Secretary to the Legislative
Assembly of Goa

LA/B/1010/1990

Dt. 10/7/90

The following Bill which was introduced in the Legislative Assembly of Goa on 9-7-90 is hereby published for general information in pursuance of the provisions of Rule-136 of the Rules of Procedure and Conduct of Business of the Legislative Assembly.

**The Goa Public Moneys (Recovery of Dues)
(Amendment) Bill, 1990**

(Bill No. 10 of 1990)

A

BILL

to amend the Goa, Daman and Diu Public Moneys (Recovery of Dues) Act, 1986.

Be it enacted by the Legislative Assembly of Goa in the Forty-first Year of the Republic of India as follows:—

1. *Short title and commencement.*—(1) This Act may be called the Goa Public Moneys (Recovery of Dues) (Amendment) Act, 1990.

(2) It shall come into force at once.

2. *Amendment of section 2.*—In section 2 of the Goa, Daman and Diu Public Moneys (Recovery of Dues) Act, 1986 (Act 10 of 1987), after clause (b), the following clause shall be inserted, namely:—

“(bb) ‘Collector’ means the Collector of a district and includes any other officer appointed by the State Government to exercise and perform all or any of the powers and functions of a Collector under this Act.”

— 2 —

Statement of Objects and Reasons

Section 3 of the Goa, Daman and Diu Public Monies (Recovery of Dues) Act, 1986 enables recovery of certain sums as arrears of land revenue. The power to recover such sums are vested in the Collector under the said Act. However, neither the term 'Collector' has been defined in the Act nor there is any provision empowering the State Government to delegate the powers of the Collector under the Act to any other officer or authority. Necessity is felt for delegating the powers of the Collector to other officers and authorities to enable speedy recovery of the outstanding moneys.

This Bill seeks to achieve the object.

Financial Memorandum

No financial implications are involved in this Bill.

Panaji DR. KASHINATH G. JALMI
3-7-1990. Minister for Revenue

Assembly Hall M. M. NAIK
Panaji Secretary to the Legislative
3-7-1990 Assembly of Goa

LA/B/1011/1990

Dt. 10/7/90

The following Bill which was introduced in the Legislative Assembly of Goa on 9-7-90 is hereby published for general information in pursuance of the provisions of Rule-136 of the Rules of Procedure and Conduct of Business of the Legislative Assembly.

The Legislative Diploma No. 2070 dated 15-4-1961

(Amendment) Bill, 1990

(Bill No. II of 1990)

A

BILL

further to amend the Legislative Diploma No. 2070 dated 15-4-1961 in its application to the State of Goa.

Be it enacted by the Legislative Assembly of Goa in the Forty-first Year of the Republic of India as follows: —

1. *Short title and commencement.* — (1) This Act may be called the Legislative Diploma No. 2070 dated 15-4-1961 (Amendment) Act, 1990.

(2) It shall come into force at once.

2. *Amendment of Article 153.* — In Article 153 of the Legislative Diploma No. 2070 dated 15-4-1961, after clause 19, the following clause shall be inserted, namely: —

"20. To direct the Administrator of the Communidade, without prejudice to any other remedy provided by law, to recover such amount or sum due, if any, from the Communidade as arrear of land revenue and for this purpose the Administrator thereof may forward to the Collector a certificate as early as possible in the prescribed form mentioning the sum due from such Communidade and requesting that such sum may be recovered as if it were an arrear of land revenue.".

Statement of Objects and Reasons

As per clause (2) of Article 100 of the Legislative Diploma No. 2070 dated 15-4-1961, the Communidade cashier is invested with power to pay to the Administration of the Communidades, monthly, the ordinary and extraordinary tithes (derrama). Similarly, clause (5) of Article 125 empowers the Administrator of Communidades to notify to the Communidades about payment of instalments of ordinary and extraordinary tithes (derrama).

On account of non-payment of tithes (derrama) by the Communidades, the Administrator of Communidades is facing great difficulties in making payment to the staff/pensioners of the office of Administration of Communidades. The present amendment seeks to obviate the above difficulties so as to enable the recovery of any dues from Communidades as arrear of land revenue.

This Bill seeks to achieve the above object by amending the Legislative Diploma No. 2070 dated 15-4-1961 by insertion of new clause 20 to Article 153.

Financial Memorandum

No financial implications are involved in this Bill.

Panaji DR. KASHINATH G. JALMI
3-7-1990 Minister for Revenue

Assembly Hall M. M. NAIK
Panaji Secretary to the Legislative
3-7-1990. Assembly of Goa.

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